IDAHO'S EXPANDING ENERGY ECONOMY

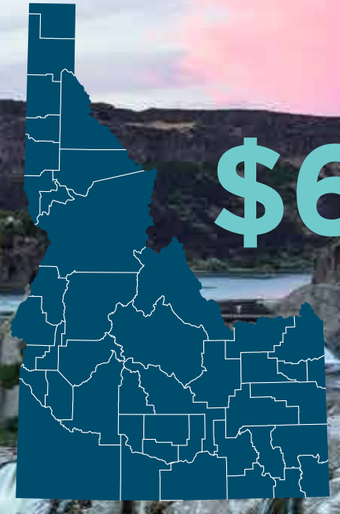
The Intermountain West, with Idaho at the core of this multistate collaboration, is an Energy Powerhouse of Innovation, Advanced Technologies, Talent, and Capabilities.

In addition to revenue, business success depends on three major components: costs, workforce and partnerships. Idaho answers these crucial business needs in a way that is just as exceptional and diverse as its breathtaking landscape.

QUICK FACTS
IDAHO'S ENERGY INDUSTRY

THE (LOW) COST
OF DOING BUSINESS

Idaho – the Gem State – is truly a treasure when it comes to resources for the energy industry. See for yourself the many reasons why energy businesses are choosing Idaho!



$6.3 BILLION-
energy industry contribution to Idaho's GDP

2400
ENERGY BUSINESSES

19%
10-YEAR PROJECTED GROWTH RATE

$91K
AVERAGE ENERGY INDUSTRY WAGE

50,829
ENERGY INDUSTRY JOBS

LOW COST OF DOING BUSINESS

AVAILABILITY OF AN ENERGY-READY WORKFORCE

RESILIENT, RELIABLE AND ENERGY-INDEPENDENT

LEADERS IN CARBON-FREE ENERGY AND ENERGY INNOVATION

SIZABLE AND DIVERSE INDUSTRY SUPPLY CHAIN

Idaho has some of the lowest energy costs in the nation. Electric rates in Idaho fall below the U.S. average in all sectors by over 25%.

Fueled by efficient hydroelectric, wind and solar power, Idaho's commercial energy rates are among the lowest in the United States and are about half that of many Western states.

U.S. News identified Idaho as the least regulated state in the country. In 2019, 75% of regulatory rules in Idaho were cut or simplified, making government less burdensome on taxpayers and business.

In 2018, Idaho was ranked the third best state for business friendliness by CNBC. Qualifying companies reap the benefits of a variety of state-sponsored tax incentives, property tax exemptions and workforce training grants.

ENERGY-READY
WORKFORCE

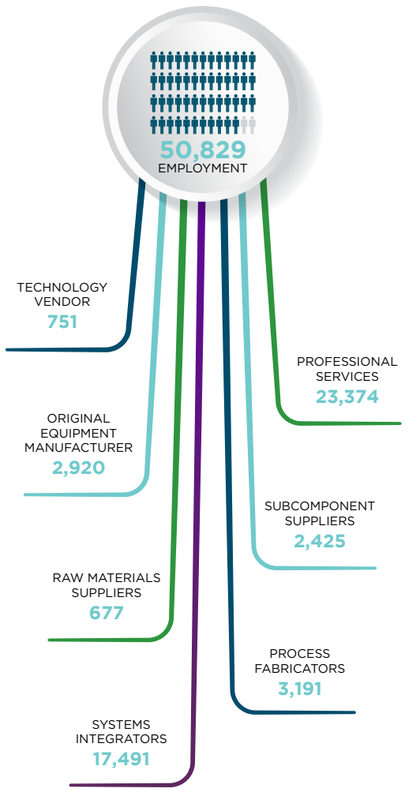
10 COLLEGES AND UNIVERSITIES WITH ENERGY COURSES

60 ENERGY-RELATED DEGREE PROGRAMS

50,829 PEOPLE EMPLOYED IN ENERGY INDUSTRY SECTORS

THE ENERGY WORKFORCE OF **TODAY**

Idaho has had significant growth in all occupations related to energy and utilities. Careers in energy span from administrative support to engineering, technicians, and research scientists. The chart below depicts the number of employees in Idaho that work in the energy industry.

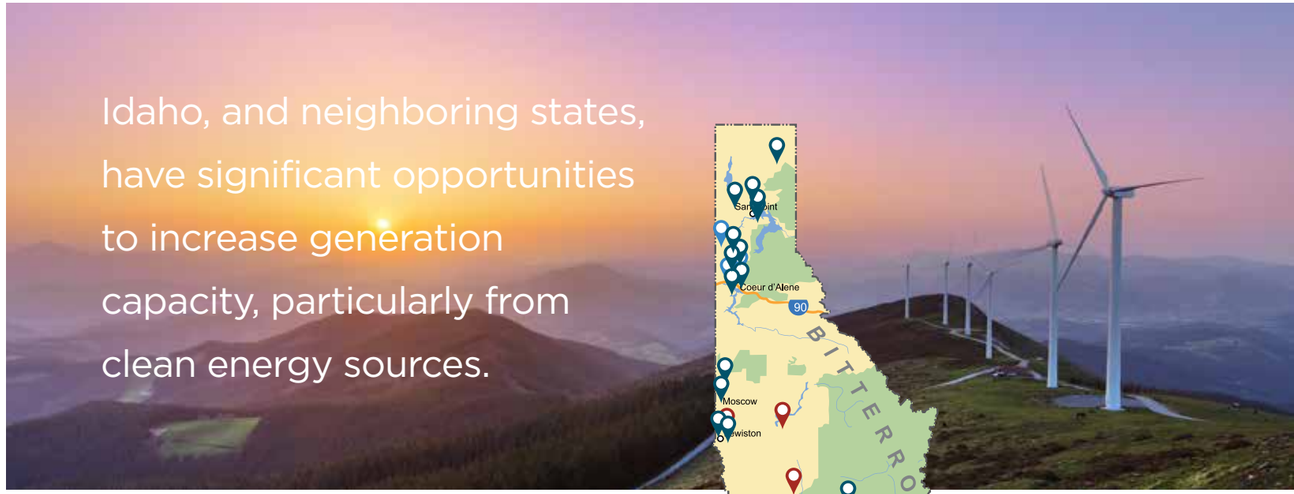


THE ENERGY WORKFORCE OF THE **FUTURE**

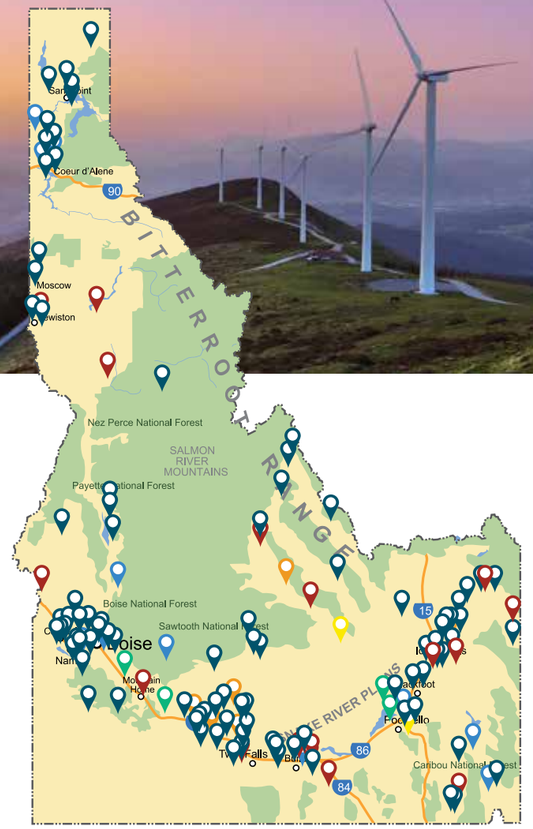
Across Idaho, higher education institutions offer competitive science, technology and energy-related programs:

- The Center for Advanced Energy Studies (CAES) brings together Idaho and regional universities to conduct research, educate the next generation of scientists and engineers, and enable partnerships with industry.
- University of Idaho, with campuses across the state, is home to engineering programs in power systems, nuclear, electrical, and more.
- Idaho State University created the Energy Systems Technology and Education Center to support growing needs in energy maintenance.
- The Micron School of Materials Science and Engineering is an integral part of Boise State University's Materials Science and Engineering program.
- Idaho colleges in every region offer programs to build skills in technology, operations and maintenance, and provide worker training to keep these skills relevant.
- Northwest Lineman College's apprenticeship program prepares its students to lead the way in construction, maintenance, and operation of the electrical grid.

RESILIENT, RELIABLE
AND ENERGY-INDEPENDENT



- Reliability and power quality, are focal areas for Idaho's energy sector. INL provides cybersecurity expertise to industry across the state.
- Approximately 86% of Idaho's electric consumers are served by three investor-owned electric utilities (Avista Corporation, Idaho Power Company, and PacifiCorp/ Rocky Mountain Power). The remaining 14% are served by 11 municipal utilities and 17 rural electric cooperatives
- Idaho is unique in that the state has an organization that collectively represents the combined public power needs of both cooperatives and municipalities under a single umbrella organization, the Idaho Consumer-Owned Utilities Association (ICUA).
- Idaho is home to a significant transmission project, the Gateway West Project managed by Idaho Power and PacifiCorp which will allow for future capacity.
- Weather-related impacts to Idaho's energy infrastructure have been minimal and are repaired quickly when they occur through the utility companies' operations and maintenance programs.



Idaho's renewable energy options are as diverse as its unique landscape. This map highlights the many forms of major generation, and also identifies the 196 smaller sources of generation across the state.

- Natural Gas Distribution (27)
- Electric Power Distribution (26)
- Hydroelectric Power Generation (6)
- Geothermal Electric Power Generation (5)
- Wind Electric Power Generation (5)
- Electric Bulk Power Transmission (3)
- Solar Electric Power Generation (3)
- Idaho has significant opportunities for increased energy generation capacity, particularly with clean and renewable energy.

A LEADER IN
CARBON-FREE ENERGY

Idaho's access to natural resources has paved the way for small and large energy producers to play a role in satisfying the state's energy needs.

In 2018, 81% of the electricity generated in Idaho at utility-scale power plants was produced from renewable energy sources.

Hydroelectric power supplied 57% of Idaho's in-state electricity in 2018.

Natural gas consumption per capita in Idaho ranks among the lowest one-third of states.

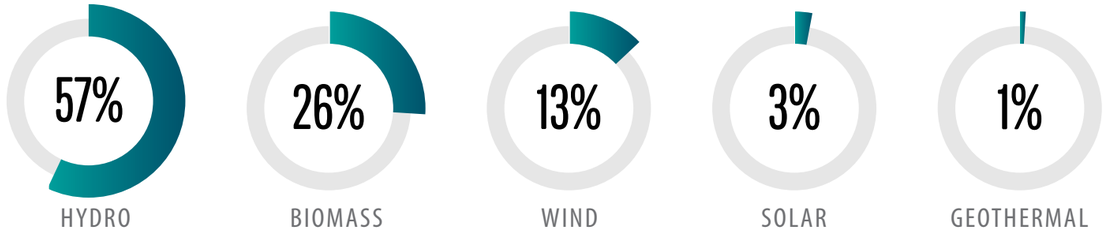
Across the Snake River Plain, the solar resources available are equivalent to most of Texas' solar resources. Idaho already has more than 300 megawatts of solar energy providing clean local power, and there is room for more solar in the future.

Idaho's 10th-largest electricity generating plant is a 125-megawatt wind facility. In 2018, about 15% of the state's net electricity generation was provided by utility-scale wind facilities, whose total combined generating capacity was close to 1,000 megawatts from nearly 550 wind turbines.

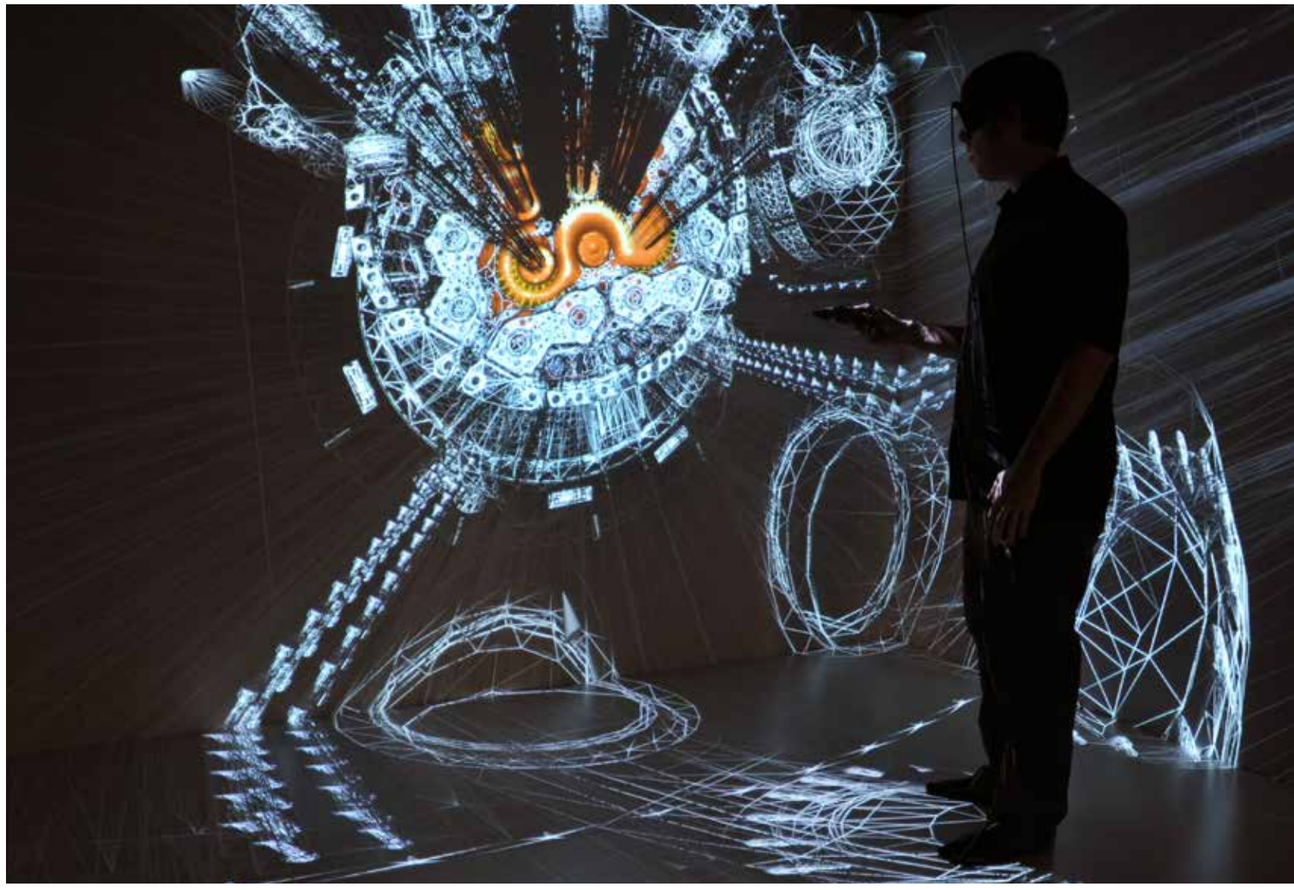
As early as 2026 NuScale's new small modular nuclear reactor technology will begin generating carbon-free power in Idaho for the Western U.S. Oklo selected Idaho for its first Aurora microreactor demonstration, which will run on recovered material from used nuclear fuel.

Idaho attracts great minds with its extremely high patent ratio, which is more than 3.5 times the national average and ranks Idaho as number one for patent activity, based on the number of patents issued to companies or individuals per 1,000 workers.

IDAHO RENEWABLE ENERGY CONSUMPTION (2017)



WORLD-CLASS
ENERGY RESEARCH CAPABILITIES



IDAHO IS TAKING THE WORLD OF ENERGY RESEARCH BY STORM!

Many Idaho-based companies and university research institutions address additional research areas, such as fuel cells, low-power batteries, electric car technologies, kinetic energy capture, biomass, new alternative fuels, and unique materials.

CAES, a collaboration between universities and INL, is uniquely positioned to help industry strengthen existing business concepts and forge entirely new ones.

Home to the first atomic-powered city in the world, the first nuclear power plant to provide usable electricity, and Idaho National Laboratory (INL), the nation's center for nuclear energy research and development, the state proudly boasts more nuclear reactors built here than anywhere else in the world.

INL manages 890 square miles, including its own power grid, and is the place of choice for testing advanced energy systems, as well as conducting research on electric vehicles, battery storage, biofuels, nuclear fuels, nuclear reactor technologies, and microgrids.

70+ YEARS
OF NUCLEAR INNOVATION

Idaho holds the distinction of being established as the National Reactor Testing Station in 1949 to foster nationwide nuclear research and innovation. For the past 70 years, INL has continued to grow and improve the world's energy future.

52 innovative reactors have been designed here, providing a host of "firsts" for the nuclear industry:

- First usable electricity generated by nuclear power
- First city powered by atomic energy
- Designed prototypes for the first nuclear-powered spacecraft
- Developed prototypes for some of the first nuclear propulsion plants for Navy submarines and aircraft carriers
- Currently operates one of two primary reactors in the nation used to produce lifesaving medical and industrial radioisotopes

INL maintains and continuously strengthens its core capabilities and infrastructure to develop, test and demonstrate advanced nuclear concepts. These capabilities include:

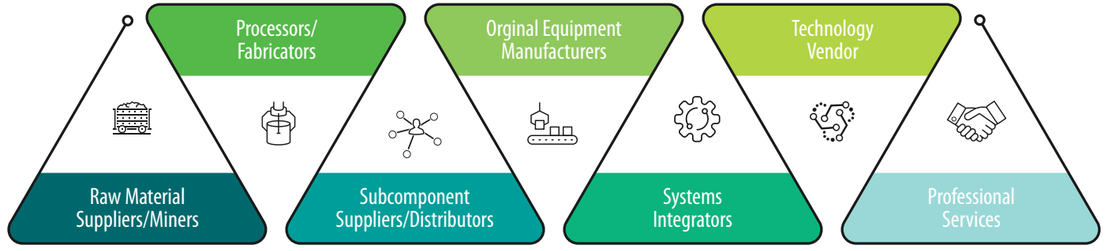
- Nuclear reactor sustainment and expanded deployment
- Integrated fuel cycle solutions
- Advanced materials and manufacturing for extreme environments
- Integrated energy systems
- Secure and resilient cyber-physical systems
- An extensive research campus that promotes collaboration with education and industry
- A collaborative computing center that boasts two supercomputers for research partnerships

The U.S. Department of Energy chose Idaho National Laboratory as the National Reactor Innovation Center (NRIC) to assist with the development of advanced nuclear energy technologies. NRIC will provide private sector technology developers the necessary support to test, evaluate and demonstrate their reactor concepts. The small modular reactor, using NuScale technology, will be operational as early as 2026.

52 INNOVATIVE REACTORS
have been designed here, providing a host of "firsts" for the nuclear industry

IDAHO'S
INDUSTRY SUPPLY CHAIN

The robust supply chain available in Idaho and regionally provides everything a business needs: from the natural resources to fuel energy systems, to manufacturing capabilities, to professional and engineering services.



- Idaho's energy industry supply chain is distributed throughout the state.
- 52% of Idaho energy industry businesses are located outside of the Boise region, making it possible to access critical supply chain resources anywhere within the state.
- Idaho has well-established organizations like the Idaho Technology Council, Southwest Idaho Manufacturers' Alliance and the Northwest Intermountain Manufacturer's Association, that are quick to collaborate, drive innovation, and ensure industry needs are being met or exceeded.
- Idaho is home to successful energy startups like Inergy Solar, a systems integrator that makes the most compact, lightweight and portable solar generators in the industry.
- Energy technology vendors based in Idaho have also seen growing success. Retrolux is the fastest-growing lighting retrofit software in the industry, using cloud-based technology to save time and energy.
- Corporations that are global leaders in energy, engineering, environmental technologies, and services for power and industrial markets worldwide have a significant presence in Idaho. These firms include Battelle Memorial Institute, Fluor, Amentum, Jacobs, Babcock and Wilcox, Power Engineers, and Schweitzer Engineering Laboratories.

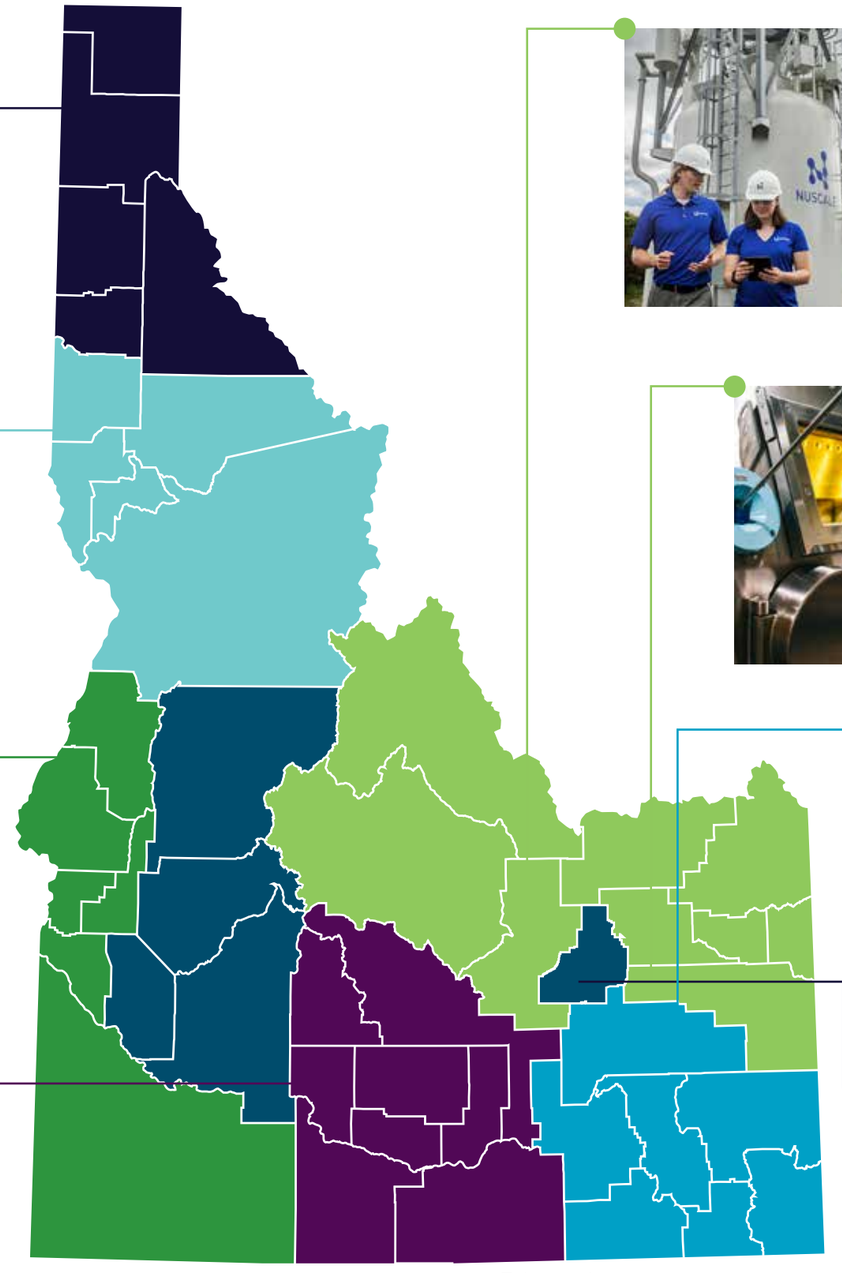
CHOOSE IDAHO

North Idaho Energy Logs are made entirely of wood byproducts from sawmills. They provide more eco-friendly, longer-lasting fuel than traditional firewood.

Lewiston is home to a 90 mw biomass electric generating facility owned by **Clearwater Paper**.

Idaho Power owns the nation's largest privately owned conventional hydroelectric generating facility on the Idaho-Oregon border. Seven of Idaho's 10 largest in-state power suppliers are hydroelectric facilities.

POWER Engineers, Inc. (POWER), is an Idaho-based company and was recently ranked as one of the top design firms in the United States, coming in at fourth in the power sector. POWER has built distributed generation and energy resources across the nation that provide secure, reliable power to customers. They recently acquired Burns and Roe, with the goal of leading nuclear design-build projects.



This map is broken down by county and region. It is by no means a comprehensive listing of Idaho energy resources, but rather a high-level overview of some resources and their key locations.

With **NuScale Power, LLC's** technology, Idaho will be home to 12 first-of-its-kind small modular reactors (SMRs), each producing about 60 megawatts electricity with no carbon emissions. The SMR facility is expected to begin operations at INL as early as 2026.

Curtiss-Wright offers a comprehensive range of products and services that support U.S. Department of Energy's complex of national laboratories. Our advanced technologies and innovative solutions have been used in civilian operating reactors for over 55 years, sustaining the safe and reliable operation of nuclear operating reactors throughout the world. We continuously provide technologies and experience in support of aging equipment management/replacement, and new construction, and offer proactive solutions to critical plant obsolescence issues.

Premier Technology, Inc. offers engineering and design, project management, manufacturing, electrical, machining, industrial coatings, and field services. From blueprint to installation, Premier has the resources to complete any custom build.

Idaho National Laboratory – the nation's lead nuclear energy lab with diverse capabilities in other clean energy innovations. INL is owned by the United States of America and overseen by the U.S. Department of Energy.

20-50231-R11

ENERGY COLLABORATORS

Idaho National Laboratory
www.inl.gov

Idaho Commerce
www.commerce.idaho.gov

Center for Advanced Energy Studies
www.caesenergy.org

Idaho Office of Energy and Mineral Resources
www.oemr.idaho.gov

Idaho Workforce Development Council
www.wdc.idaho.gov

Idaho Department of Environmental Quality
www.deq.idaho.gov

Idaho Consumer-Owned Utilities Association
www.icua.coop

IDAHO
COMMERCE